



NATIONAL OPEN UNIVERSITY OF NIGERIA
DEPARTMENT OF PURE AND APPLIED SCIENCES
2021_2 EXAMINATIONS⁴⁵⁶⁷⁸

COURSE CODE: CHM 312

COURSE TITLE: INDUSTRIAL CHEMICAL PROCESSES 1

INSTRUCTION: *Answer question 1 and any other 3 questions*

CREDIT UNIT: 2

TIME: 2 HRS

Question 1

1. a. Define the following [2 marks each= 14 marks]
- i. Brewing.
 - ii. Malting
 - iii. Oenology
 - iv. Polymer
 - v. Monomer
 - vi. Polymerisation
 - vii. Adhesives
- b. Classify pesticides based on origin [8 marks]
- c. Name the three phases of industrial production of penicillin [3 marks]

Question 2

- 2a. Differentiate between thermosets and thermoplastics polymers [8 marks]
- b. State five unit operations techniques used in product recovering [3 marks]
- c. List four processes used during the process of manufacturing beer. [4 marks]

Question 3

3. a. Draw the structure of monosodium glutamate [3 marks]
- b. i. Write briefly on feeling factor [2 marks]
- ii. Outline six advantages of emulsion polymerisation over other polymerisation techniques [6 marks]
- c. Outline four specific features of enzymes? [4 marks]

Question 4

4. a. i. What is fermentation? [2 marks]
- ii. Give two types of flavouring agents [2 marks]

b. Use chemical equation to show the preparation of benzaldehyde

[5 marks]

c. Write briefly on the classification of explosives

[6 marks]

Question 5

5. a. i. What are antibiotics?

[2 marks]

ii. Outline five applications of polymers in industries

[5 marks]

b. Outline six ageing methods used in wine production

[6 marks]

c. Draw the structure of styrene-butadiene rubber

[2 marks]